

“Material deprivation and poor housing”

What can be learned from the EU-SILC 2004 data?

How can EU-SILC be improved in this matter?

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Summary

European Union (EU) Heads of State and Government endorsed common statistical indicators of social exclusion, that are an essential element in the Open Method of Co-ordination to monitor progress of Member States in the fight against poverty and social exclusion. This list of common indicators has a primary focus on indicators of relative income poverty.

This paper aims to compare poverty picture that can be drawn on the basis on this relative monetary approach, with an alternative view based on material deprivation measures, more “absolute” and multidimensional. Material deprivation is defined as the enforced lack of a combination of items depicting material living conditions, such as housing conditions, possession of durables, capacity to afford basic requirements. It is worth highlighting that the proposed indicators are not indices of social exclusion that take account of all the dimensions of the phenomenon (i.e. health, education, social participation, etc). They are simply intended to offer synthetic information on material living conditions in an enlarged Union. The use of such complementary measures is indeed particularly meaningful in the context of the enlarged union as questions are raised concerning the ability of the existing portfolio of common indicators to satisfactorily reflect the situation in New Member States, Acceding and Candidate countries, as well as differences between them and the ‘old’ Member states.

This paper discusses the methodological options for the construction of this type of indicators, drawing from the existing literature, and presents some results on the basis on the new harmonised micro data 2004 EU-SILC. Furthermore, a methodology to assess the EU-SILC target variables on material deprivation will be proposed in order to make survey variables able to give a better overview on material deprivation in the enlarged Europe.

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A new Source on Income, Poverty & Social Exclusion...

During the reference period 1994-2001 the European Community Household Panel (ECHP)³ has traditionally been the primary source of data used for the calculation of these indicators in the field of Income, Poverty & Social Exclusion. Given the need to update the content of the ECHP in order to satisfy new political demands, to reflect evolving best practice and to improve operational quality, i.e. mainly the timely publication of the data which is produced, it was decided to replace the ECHP and to introduce a legal act for its replacement, the EU-SILC (Community Statistics on Income and living Conditions, see annex C). The EU-SILC project was launched in 2003 on the basis of a 'gentleman's agreement' in six Member States (Belgium, Denmark, Greece, Ireland, Luxembourg, and Austria) as well as in Norway. The starting date for the EU-SILC instrument under the Framework Regulation of the European Parliament and of the Council was 2004 for the EU-15 (with the exception of Germany, Netherlands and the UK who have derogations until 2005) as well as for Estonia, Norway. The New Member States with the exception of Estonia are allowed to start in 2005⁴.

This means that, for the first time, SILC-2004 is available on a larger basis (13 Member States + Norway) and makes it possible to test whether the results on poverty and deprivation that were previously highlighted on the ECHP data are confirmed by the new instrument. Furthermore, for the first time, comparable and harmonised data are available for one of the new Members States (Estonia)

³ See annex A1.

⁴ The implications of this means that the first set of micro data and cross-sectional indicators from EU-SILC which covers all the EU25 Member States will only be available in December 2006.

and will permit to study and compare living conditions information with the information usually presented for EU15 Member States.

What can be learned from material deprivation measures?

At the Laeken European Council in December 2001, European Union (EU) Heads of State and Government endorsed a first set of 18 common statistical indicators of social exclusion and poverty that were later refined by the Indicators Sub-Group of the Social Protection Committee. These indicators are an essential element in the Open Method of Co-ordination to monitor progress of Member States in the fight against poverty and social exclusion.

In the current list of common (EU) indicators of poverty and social exclusion to be used in the context of the Open Method of Coordination on social inclusion, there is a primary focus on indicators of relative income poverty, defined in relation to the distribution of income within each country. "An absolute notion is considered as less relevant for the EU for two basic reasons. First, the key challenge for Europe is to make the whole population share the benefits of high average prosperity, and not to reach basic standards of living, as in less developed parts of the world. Secondly, what is regarded as minimal acceptable living standards depends largely on the general level of social and economic development, which tends to vary considerably across countries"⁵.

Nonetheless, questions are raised concerning the ability of the existing portfolio of indicators to satisfactorily reflect the situation in New Member States, Acceding and Candidate countries, as well as differences between them and the 'old' Member states. When comparing national situations in an enlarged Union, the performance in terms of exposure to relative monetary poverty is very similar between old and new Member States even though standards of living are extremely different, as can be seen for example from a comparison of the levels of the national at-risk-of poverty threshold values. An illustration of this diversity of living conditions can also be given by some partial evidence available about material deprivation in the New Member States and the Acceding and Candidate Countries⁶. Around 30% of people would like to have a car but cannot afford it (referred below as 'enforced lack') in most of the New Member States and Acceding and Candidate Countries, except in the Czech Republic (19%) and Cyprus, Malta, Slovenia that are close to the EU15 average (5%). The diversity of deprivation across the EU25 is even more striking in the access to basic necessities, as the proportion of people that cannot afford a meal with meat, chicken or fish every second day (if they so wished) is close or above 30% in five out of the ten New Member States and is even more widespread in the Acceding and Candidate Countries (the EU15 average being 4%). The proportion of people lacking an indoor flushing toilet is around 20% in Baltic Countries, i.e. more than 4 times the most deprived EU15 country (Portugal).

These figures highlight the need to complement the information provided by indicators of relative monetary poverty, in order to give a more complete picture of the living conditions of people in different national contexts, but this is not the only reason. Even at national level, it is now well recognized that different approaches to poverty measurement, including the material deprivation one, are useful to take into account the different aspects of poverty.

It could be argued that figures concerning material living conditions solely reflect differential access to resources and/or subjective consumer tastes and preferences – and that monetary income measures are consequently a better proxy for measuring living standards, while being easier to collect. However, income and resources, whilst clearly linked, are not the same thing: other individual resources matter in addition to income (eg. assets/debts, previous labour positions or non-cash transfers). In addition, it is not always possible to measure income accurately, especially for some groups of the population like for example the self-employed or for people working in the grey economy. In this case, the joint analysis of relative income poverty measures and material deprivation indicators can be useful. Furthermore, in the (current) absence of longitudinal data on income (due to the launch of a new survey), lack of essential durables or difficulties in payments provides a good proxy of persistent poverty since they reflect absence of sufficient (permanent) resources rather than of adequate current income.

⁵ European Commission (2004).

⁶ Data from European Quality of Life Survey, 2003 (European Foundation for the improvement of living and working conditions).

This paper discusses the methodological options for the construction of this type of indicators, drawing from the existing literature, and presents some results on the basis on the new harmonised micro data 2004 EU-SILC. Furthermore, a methodology to assess the EU-SILC target variables on material deprivation will be proposed in order to make survey variables able to give a better overview on material deprivation in the enlarged Europe.

The development and use of material deprivation indicators is currently being discussed by the Indicators Sub-Group of the Social Protection Committee, with a view to further refining and consolidating the original list of common indicators adopted at Laeken. No clear agreement has yet been reached on them although a lot of progress has been made.

How to define material deprivation?

In this paper, material deprivation is defined as the *enforced lack* of a combination of items depicting material living conditions, such as housing conditions, possession of durables, and capacity to afford basic requirements. It is worth highlighting that the proposed indicators are not indices of social exclusion that take account of all the dimensions of the phenomenon (i.e., access to the labour market, health, education, social participation, etc). They are simply intended to offer synthetic information on *material* living conditions in an enlarged Union.

To be chosen as a 'lifestyle deprivation' item, an item should ideally meet the following requirements⁷:

- (1) it reflects the lack of an ordinary living pattern common to a majority or large part of the population in the European Union and most of its Member States;
- (2) it allows international comparisons (i.e., it should have the same information value in the various countries, and not relate specifically to a 'national' context);
- (3) it allows comparisons over time
- (4) it is responsive to changes in the level of living of people.

Obviously, the availability and quality of the data is another important constraint that needs to be taken into account.

The first criterion relates to the degree of penetration of the item in the society. Townsend (1979) defined deprivation as the lack of socially-perceived necessities. Ideally, information on social perceptions about which items are considered as essential by the majority of the population should guide our choice. In the absence of such information, frequency controls on existing data that inform us about the degree of penetration of the items within a given country are taken as an indication of that country's preferences and social values.

The second criterion relating to comparability between countries is key to our methodological choices, as it can be applied more or less stringently. It can be argued that comparison of deprivation between countries does not require that each item has the same social value in each country. We could even imagine that different items are chosen in each country, as far as the information value contained globally in the basket of retained items measures the same thing, as is done in temporal consumer price indices⁸. However, the use of a harmonised database with a limited set of variables prevents the feasibility of this approach. A country-specific weighting applied to the same set of items allows to take into account specific national hierarchy between items and specific behaviours or situations (see below).

The question of the temporal adequacy of the choices of the items is an essential one and can be linked to the fourth criterion as well. It is important to have in mind that the list of material deprivation items will need to be assessed regularly in order to ensure that they are representative of up-to-date consumption patterns in all Member States. On the occasion of the next revision of the EU-SILC regulation, there will be an opportunity to review some of the target variables and thus to adjust the list of deprivation items.

⁷ These criteria are a revised version of those proposed in Eurostat (2000). Some of them show clear filiations with the seminal work on material deprivation of Townsend (1979) and Mack and Lansley (1985).

⁸ This approach is for example followed in INSEE (2005).

What can be learned on material deprivation from the EU-SILC 2004 data?

On the basis of items available in EU-SILC, and applying as far as possible, the criteria explained in the previous section, a list of items was chosen in order to illustrate material deprivation and poor housing in EU (see Figure 1).

Once this list of items chosen, a detailed presentation of deprivation shares for each single item could be considered as illustrative (see in statistical appendix Table A) but remains too detailed, making it hard to draw a comprehensive picture of deprivation in each country. To simplify the interpretation of the information available in the list of items and also to highlight any different patterns of deprivation determinants in different countries, it is useful to cluster the items in a limited number of dimensions of lifestyle deprivation. The logic of this approach is that the items should be used as indicative of their underlying dimension, more than measures of themselves. The information will therefore be aggregated by dimension, but the aggregation process will be stopped at the dimension level, as the construction of one single composite multidimensional indicator would lack transparency and homogeneity.

To do so, some technical choices have to be made. We can group items together according to the 'meaning' of their underlying characteristics on the basis of subjective criteria (for example all housing items together) or empirically through data analysis. Factor analysis is one technique that can be used to regroup a wide range of variables into a smaller number of dimensions. However, this technique is sometimes criticised (see for example McKay and Collard, 2003) as there is a certain degree of arbitrariness in the choice of items and the number of factors. Furthermore, as it is data driven, different solutions can be obtained from different samples or from the same sample over time. Despite such limitations, factor analysis remains a useful tool for exploring the underlying structure of data and was widely used, for example in ECHP data.

A first advantage of having access to the results of the new survey (EU-SILC) for 12 EU-15 Member States (plus Estonia and Norway) is to check the consistency of the results obtained through factor analysis between the new survey and the old one (ECHP). This can be done through confirmatory factor analysis (CFA) on the SILC-2004 data.

In an exploratory factor analysis (EFA), the structure of the latent factor model or the underlying theory is not specified a priori; rather data are used to reveal the structure of the factors. This technique was used to explore ECHP data and to highlight the dimension structure used in different ECHP publications⁹. In CFA, on the other hand, the precise structure of the factor model is assumed and tested. At this stage, the confirmatory approach is far more powerful than the exploratory one, as it allows for hypothesis testing of the factor structure adequacy that is planned to be used in the deprivation domain at the EU-level. A confirmatory factor analysis was then performed on available EU-SILC data and showed the consistency of the dimension structure highlighted on the ECHP. Following the dimension structure highlighted through factor analysis, the items are grouped in three dimensions, relating to 'economic strain', enforced lack of durables and housing, as presented in Figure 1.

Note also that factor analysis is usually based on Pearson correlations. However, there may be problems with using the Pearson correlations, for these assume that the variables are continuous and normally distributed. If the variables are discrete and even dichotomous, important categorization errors can result (see Dekkers (2003), page 6). Tetrachoric correlations could be more adapted to the binary nature of data used. To evaluate the sensitivity of our results to the correlations used, we followed Dekkers (2003) and used the matrix of tetrachoric correlations as the input for the CFA¹⁰. Results appeared to be robust. Table D, in annex, presents the fit statistics of the CFA, which are reasonably high and confirm that a structure in 3 dimensions can be accepted by the data, either when the CFA is performed country by country or on the pooled data. Oblique rotation was applied, implying the hypothesis that the dimensions are correlated. Table E, in annex, presents the covariance between dimensions, showing that being deprived in one dimension is positively correlated with deprivation in other dimensions. The highest correlation is between the economic strain and durables dimensions (0,8).

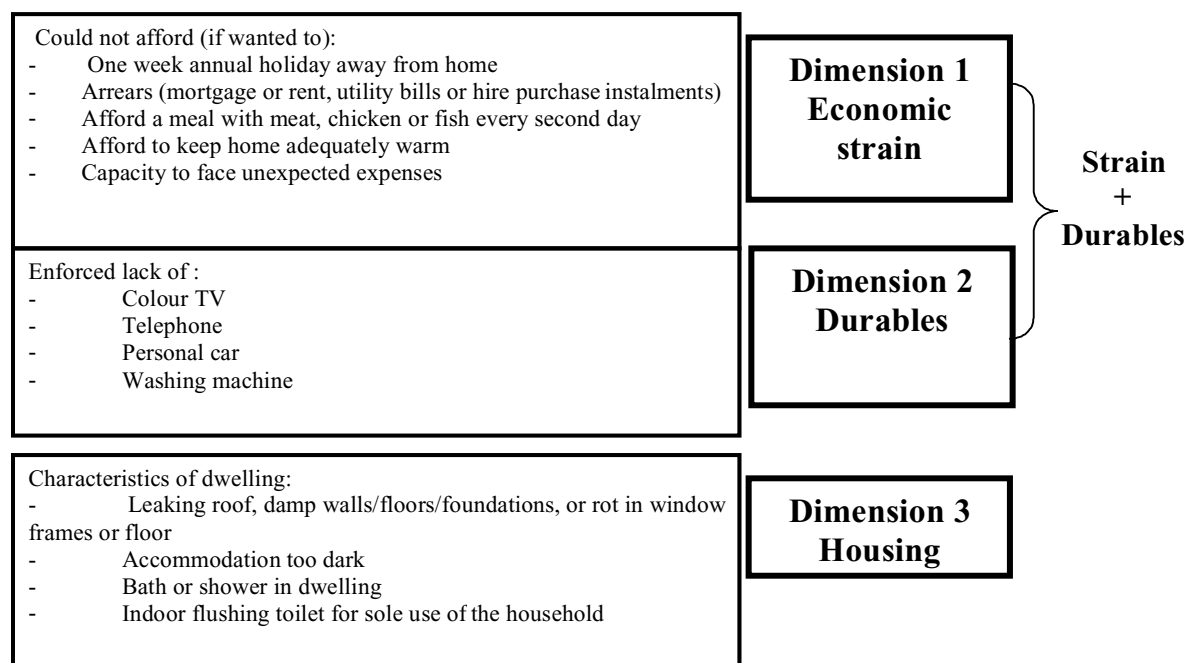
⁹ The approach adopted here builds upon earlier work; see for example Callan, Nolan, Whelan (1993); Whelan, Layte, Maitre (2001); Eurostat (2003), Guio (2005b).

¹⁰ It has to be noted that estimators will be consistent, although the standard errors as well as the chi-square tests will be inconsistent.

As also presented in Annex D, information on economic strain and durables could also be combined with little loss of information and gain in simplicity¹¹. This solution can not be rejected by the data analysis and offers the advantage in an EU context of presenting only two aggregations, one based on a larger set of commodities and activities whose access is linked to the financial strain encountered by the household, the other depicting the housing conditions (housing comfort and housing facilities).

The two- and three-factors solutions are alternatively used in this document.

Figure 1: dimension structure



Notes: Similar items are not fully identical between the ECHP and EU-SILC. For example, the housing conditions items (Leaking roof or damp walls/floors/foundations or rot in window frames or floor) initially surveyed in three separate questions in the ECHP are now surveyed in a single question. The questions on difficulties of payments are surveyed in 3 questions in EU-SILC instead of 4 in the ECHP. The enforced lack of a telephone takes into account the mobile phone in EU-SILC.

Note that the dimension structure is not directly comparable to the one used in Guio (2005), due to the inclusion of two new EU-SILC variables (Capacity to face unexpected expenses and washing machine).

The *economic strain dimension* focuses mainly on affordability of some aspects of living standards (meal, home warm and holidays). Note specifically that, even if it can be discussed whether the enforced lack of holidays has to be considered as a social necessity in Europe, this item is highly correlated with the other constitutive items of the 'economic strain' dimension and appears as a good proxy of financial constraints. The items relating to the affordability to keep the home adequately warm is not perfectly comparable between countries in the 2004 survey. Some countries focused more on the *capacity* to keep the home warm instead of the *affordability* to do so.

For *durables*, the surveys permit to distinguish between lack of items (due to choice) or *enforced* lack of items (people would like to possess the items but cannot afford them). Only this latter group was considered as reflecting "deprivation", in order to exclude lifestyle preferences from the concept of deprivation. In doing so, we focus on items whose absence is attributed to limited resources rather than differences in taste and constraints such as ill health, location etc. It must however be kept in mind that individuals' expectations as to their material well-being tend to increase with income and to decrease with long term poverty (the so-called "adaptive preferences") and as a consequence poor people may declare not to need the goods they lack more often than wealthier individuals.

¹¹ As proposed in Atkinson, Cantillon, Marlier, Nolan (2005).

Furthermore, people may not want to admit not being able to afford buying certain items. Therefore, it cannot be excluded that psychological phenomena or measurement issues introduce 'noise' in the measure of enforced lack of item. However, when possible, restricting our analysis to the enforced lack of items appeared crucial to focus on material deprivation. These questions are related to the more general question of choices and preferences. It cannot be excluded that people might choose in priority a pattern of consumption not considered as essential by the analysis and can not afford the list of items retained¹².

Some items available in the surveys are based on *subjective information* of the respondent. On the one hand, subjective questions can be culturally influenced and require caution in international comparison; and the aforementioned "adaptive preferences" also need to be kept in mind. On the other hand, social exclusion influences and is influenced by the perceptions of people, not only by "objective" rules or external judgement on a person's situation. Dropping the subjective items, as a choice of principle, might lead to a measure disconnected with the reality as lived and perceived by people. This could especially be the case if the list of "concrete" items that we think people should be able to afford is not well adapted to the social preferences of the society and their evolution.

The potential criticisms of including subjective items holds true, to a certain extent, for the majority of deprivation items presented in this paper, but the subjective element is probably predominant in some variable like the subjective assessment of the people own economic situation (as the item related to the ability "to make ends meet"). It was therefore decided not to use such item, but to test the inclusion of a new EU-SILC variable on the "Capacity of the household to face unexpected required expenses" (as this variable does not depend on the consumption goals, even in case of adaptive preferences, and is only weakly influenced by the psychological state and the cultural background of individuals). From SILC 2005, this variable is based on a harmonised definition, however, the adequate definition could not be applied from 2004. Specially, in Estonia, for the first survey year, instead of defining the amount of the unexpected expense as the monthly poverty threshold (1600 kroons), a lower amount (1000 kroons) was chosen as a reference. This therefore underestimates the proportion of people deprived in Estonia and will be corrected in next data collections.

A shortage of space item was constructed on the basis of the ratio between the number of people in the household and the number of rooms in the dwelling. As in the ECHP, the factor analysis shows that this item is poorly correlated with the other items in the list (and tends to be weakly loaded to the economic strain dimension). This item is therefore not included in the set of housing items discussed in this paper but will eventually be included in the next versions of the indicators, as most of the Member States consider this information as a crucial one.

Among deprivation items available in the database, *environmental* information (like reports of vandalism, crime or pollution) could have been integrated in the analysis. The factor analysis showed clearly that these items are grouped together in one separate dimension, not mixed with the housing one. However, data analysis revealed no systematic relationship between poverty and these items or between other dimensions and the environmental one, as such problems can reflect urban social problems that can affect the whole society rather than just the poorest groups.

¹² See for example INSEE (2005) and Willits M. (2006).

1. Some simple results:

On the basis of deprivation proportions (see Table A and B in statistical appendix), we can consider a person as deprived in each dimension if he/she lacks at least a minimal number of items. Although arbitrary, this approach permits the computation of deprivation rates in each dimension. This type of indicator has the advantage of transparency and furthermore takes into account the accumulation of deprivations at individual level. Note also that the value of these measures depends on the total number of items taken into account in the dimension. The larger the number of items, the higher the probability to be deprived.

Table 1 presents the share of the population affected by at least 2 problems in the economic strain dimension, lacking at least 1 durable, suffering from at least 2 problems in the combined strain/durables dimension and from at least one housing problems¹³.

Table 1: Share of people affected by material deprivation in each dimension

People lacking :	AT	BE	DK	EE	ES	FI	FR	GR	IE	IT	LU	NO	PT	SE
Economic strain (at least 2 out of 5 items)	16	22	11	28	32	18	33	39	16	27	8	10	44	11
Durables (at least 1 out of 4 items)	6	9	10	34	7	10	11	13	11	5	1	6	16	6
Econ. Str. + dur. (at least 2 out of 9 items)	17	24	14	44	33	21	34	42	19	28	9	12	46	13
Housing (at least 1 out of 4 items)	14	23	12	46	29	9	22	24	17	27	20	11	39	9

Source: Eurostat, EU-SILC survey year 2004. Reference population: people aged 0+. Figures are rounded.

The figures presented in Table 1 show large variations across countries in terms of the share of people affected by problems of material deprivation, depending on the dimension:

In the economic strain dimension, around 10% of the population suffers from at least two problems in Denmark, Luxembourg, Norway and Sweden, whereas the share is much higher –40% and over - in Portugal or Greece.

In the durables dimension, the enforced lack affects a smaller proportion of the population ranges from 1% in Luxembourg to 34% in Estonia. The deprivation in the durables dimension is mainly influenced by the enforced lack of a car (see Table A in statistical appendix).

In terms of housing deprivation, the proportion of people facing at least one housing problems ranges from 9% (FI, SE) to 46% in Estonia; it is 39% in Portugal.

2. Comparison between income poverty and material deprivation

In order to illustrate analysis that can be performed on the basis of deprivation indicators, Figure 2 compares the proportion of people deprived in the combined strain/durables dimension, with the monetary poverty risk, by country¹⁴.

In the least deprived countries (LU, NO, SE, DK, AT), the deprivation rate is comparable to the poverty risk rate and conversely, the most deprived countries (PT, EE, GR, FR¹⁵, ES, IT) face deprivation far higher than their poverty risk levels. This would mean that measuring poverty and social exclusion through material deprivation indicators based on a common set of items independently of their distribution across the population (contrarily to a relative measure) shows a much greater diversity of national situations than would be inferred on the basis of the relative poverty risk indicator.

¹³ Note that these figures are not directly comparable to the one presented in Guio (2005b), due to the inclusion of the two new EU-SILC variables (Capacity to face unexpected expenses and washing machine).

¹⁴ Estonian microdata were only validated in February 2006 and were not used to produce official indicators for Open Method of Coordination (still based on national HBS).

¹⁵ For EE and FR, see notes below Table A in annex.

In Figure 2, note also the case of Ireland where the deprivation level (this is true for all the dimensions, see Table 1) is lower than could be expected on the basis on the poverty risk rate. This would tend to confirm that the economic situation in Ireland impacts positively on the material living conditions of people, even if, in relative terms, the income situation of some individuals has not kept up with the overall rapid growth in the country and is still below the at-risk of poverty threshold.

The countries ranking according to the two approaches also differ for France, Finland and Belgium (where there is more deprivation than monetary poverty).

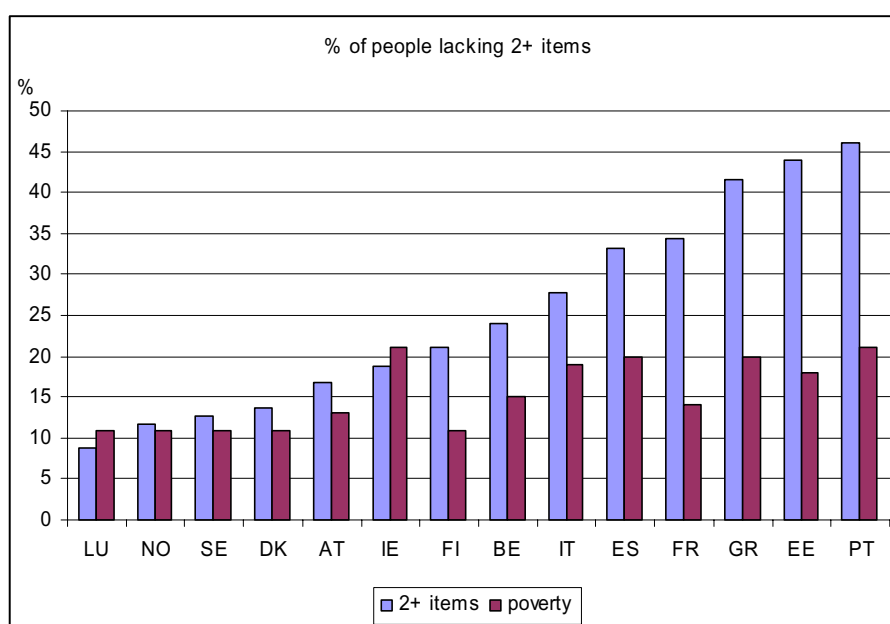


Figure 2: % of people lacking at least two items in the economic strain + durables dimension, compared to the proportion of people at risk of poverty

Source: Eurostat, EU-SILC survey year 2004. Reference population: people aged 0+.

The overlap between poverty and deprivation can also be deepened through consistent poverty measures, i.e. by focusing on people facing deprivation and relative income poverty (intersection approach). This could help to exclude from the “poor” population those people for whom there are deprivation or income mis-measurements, people receiving low income but avoiding deprivation or people facing deprivation but receiving income above the threshold. Table 2 presents these figures, as well as the at-risk-of poverty rate of the people considered as ‘deprived’, and the deprivation rate of ‘poor’ people (these two figures can be easily deducted by the ratio between the consistent poverty rate and either the poverty rate or the deprivation rate).

Table 2: Proportion of the population ‘poor’, lacking at least 2 items in the strain + durables dimension, and suffering from both problem, %

	AT	BE	DK	EE	ES	FI	FR	GR	IE	IT	LU	NO	PT	SE
Consistent poverty	5	8	3	13	11	5	9	14	8	11	4	3	14	3
Poverty rate among the 'deprived'	31	32	24	30	34	26	27	33	45	40	45	28	32	24
Deprivation rate among the 'poor'	41	53	31	67	56	50	69	68	41	59	35	31	69	31

Source: Eurostat, EU-SILC survey year 2004. Reference population: people aged 0+.

The consistent poverty share (consistent poverty in proportion of poverty rate) varies between 30% (in DK, SE, NO) to more than 60% (PT, EE, GR). This means that in the most deprived countries, the majority of the ‘poor’ are also ‘deprived’. However, the opposite is far from being true. A non negligible

proportion of the population deprived is not 'consistently poor'. Indeed, in proportion of the deprivation rate, the consistent poverty share attains around 20-30%, except in Ireland, Luxembourg or Italy (40% or more). In the other New Member States, one can expect that the consistent poverty approach would also focus on only a limited subset of the population facing deprivation, as the level of relative monetary poverty is close to the EU average in these countries. However, in the enlarged Union, the figures show that the deprivation level is far from being comparable between countries, with even the 'poorest' in 'rich' countries facing a lower deprivation level than the 'richest' in 'poor' countries¹⁶. Therefore, restricting the use of a deprivation measure by combining it with a monetary relative criterion risks to hide the diversity of social and economic development levels among EU25 Countries. It seems therefore preferable, at this stage, to present the monetary and non-monetary measures separately.

3. A focus on children: are they more at-risk of deprivation than the total population?

Table 3: Deprivation rate, in each dimension, children and total population

	AT		BE		DK		EE		ES		FI		FR		GR		IE		IT		LU		NO		PT		SE			
	ALL	0-15	ALL	0-15	ALL	0-15	ALL	0-15	ALL	0-15	ALL	0-15	ALL	0-15	ALL	0-15	ALL	0-15	ALL	0-15	ALL	0-15	ALL	0-15	ALL	0-15	ALL	0-15		
Economic strain	2+		15	17	22	29	11	13	28	31	32	30	18	24	32	37	39	33	16	22	27	28	9	13	10	13	42	44	12	15
Durables	1+		6	6	9	10	10	9	34	31	7	7	10	6	11	13	13	9	12	12	5	5	1	1	6	5	16	17	6	7
Housing	1+		14	14	23	23	12	13	47	48	29	28	9	9	22	22	24	20	17	17	27	27	20	23	11	13	39	37	9	9
Poverty			13	15	15	17	11	9	18	20	20	24	11	10	14	14	20	20	21	22	19	26	11	18	11	8	21	23	11	11

Source: Eurostat, EU-SILC survey year 2004. Reference population: people aged 0+ and aged 0-15.

On the basis of the indicators breakdowns, it can also be evaluated whether deprivation and monetary relative poverty offer a similar diagnosis on the relative position of different risk groups. An example is provided in Table 3 where figures for children and the total population are compared.

On this basis, it seems that the different approaches may offer a different assessment on children relative risk, depending on the country and the dimension (the three dimensions structure is used in order to eventually highlight different age patterns in the durables and strain dimensions). Significant difference between children and the total population are coloured (confidence intervals were computed by linearization of the difference between the deprivation/poverty rates by age). The darker colour highlights differences at the children advantage

In the strain dimension, children are generally more at risk than the total population (except in Greece and Spain), indicating that the presence of children in the household can increase financial constraints. Not only have children higher probability of deprivation, but they often also have higher probability of cumulating these deprivations¹⁷.

In the durables dimension, children tend to be equally or even less deprived (EE, FI, GR) than the total population. In the housing dimension, differences are rarely significant, except in Greece and Portugal (where children face less deprivation than the total population) and in Luxembourg (and to a lesser extent in Denmark and Norway) where the reverse situation is true. This would mean that, despite potentially higher financial difficulties, households with children try to guard their family against housing discomfort and enforced lack of durables.

In terms of comparison of the children relative performance between deprivation and monetary approaches, Table 3 also indicates that:

- In Denmark, Finland, Ireland, Sweden and Norway the children are more deprived (at least in the strain dimension) than the whole population although they were considered as less or

¹⁶ This is confirmed by data presented in European Foundation for the Improvement of Living and Working Conditions (2004).

¹⁷ See for similar conclusions Hussain M.A. (2002).

identically poor. In these countries, the deprivation approach therefore highlights children relative risks, which were not apparent in the relative monetary poverty approach.

- In Luxembourg, the higher risk faced by children is confirmed by the monetary poverty and the economic strain and housing deprivation.
- In Italy, Belgium, Austria, the gap is significant in the deprivation dimension and in the monetary approach.
- In Portugal, children slightly higher risk than the whole population in the economic strain and poverty dimension, but face better housing conditions
- In Spain, although children have more probability of being monetarily poor than the whole population, they have slightly less risk of deprivation than the total population.
- In Greece, children face less deprivation risk than the whole population (whatever the dimension), although there are considered as equally poor. Note however that, even if Greek children face less risk than the whole population, one third of them live in family with at least two economic strain difficulties, against 13% in Denmark, Luxembourg or Norway.

4. Does each deprivation item have the same importance?

The above figures result from a simple count of the items of deprivation over the population. The main advantage of this approach is to facilitate the interpretation of the results and to avoid having to make decisions about which items are more relevant for measuring individuals' material deprivation. However, this makes the implicit assumption that each item has the same importance in terms of deprivation. This can be questioned, which is why the use of weights could be considered.

These weights could be established on the basis of social views on what is more desirable or even necessary, i.e. goods considered as necessary by a larger proportion of the population should receive greater weights. However such information is not easy to collect and is not always available in surveys.

An alternative method for constructing weights is to weight each item by a function of the proportion of persons who do possess the item in the country¹⁸. The idea is that the higher the proportion of people who have the item, the more likely a person not being able to afford the item (but wanting it) will feel deprived.

This prevalence weighting approach can be summarized as follows: in each dimension, the deprivation score (u_j) for each individual (j) in the sample equals the sum over the items (X_{ij}) weighted with w_i , i.e. the ratio between the proportion of people having the item i (h_i) over the whole population and the sum of the proportion of "haves" for all items in the dimension (see formula 1).

Formula 1:

$$u_j = \sum_{i=1}^I w_i X_{ij}$$

$$\text{where } w_i = \frac{h_i}{\sum_{i=1}^I h_i}$$

$$\text{and } \sum_{i=1}^I w_i = 1$$

Different functions of weights were tested. First, weights were based on a linear function of the proportion of 'haves' (see formula 1) and secondly we tried to use a weighting structure which still varies positively with the proportion of "haves" as desired, but which gives higher weights to items with higher proportions of 'haves' and introduce higher variability between items (the weights are based on

¹⁸ See for a similar approach: Tsakoglou and Papadopoulos (2001); Whelan et al. (2002); D'Ambrosio, Gradin (2003); Muffels, Fouarge (2004); Förster (2005).

the coefficient of variation of each deprivation item)¹⁹. However, as both types of weights gave similar results, we preferred to use the simplest (non linear) form of weights, which give results more easily understandable.

Like for the indicator of relative monetary poverty, one important question is related to the choice of the reference population. We made the hypothesis that, in evaluating their material situation, respondents are influenced most by their perceptions of how they are doing compared to others in their own country, even if it might be argued that, in the European Union, comparisons would extend beyond national border lines²⁰. The set of different weights is common to all individuals in the country (see annex F).

The question of weighting or not can also receive a different answer depending on whether we only focus on basic needs or on a larger set of items. It can be easily argued that access to some items has the same normative value, whatever the country and whatever the proportion of 'haves' in the country, if these items are considered as essential. For such items, the unweighted approach could be preferable. It could be argued, for example, that (most of) the items in the housing dimension are in this case²¹.

Figure 3 presents the mean indices by country, either weighted or unweighted, for the economic strain dimension. Each mean index is constructed as a (simple/weighted) average of the deprivation shares in the dimension, normalised by one. The mean score can be interpreted as the mean percentage of deprivation suffered by people. The nearer the index is to 0, the less deprived people are (on average). The figures can be read as follows: in Portugal on average, people miss almost 17 percent of the 9 items of the strain+durables dimension. When we take into account the weights, the average weighted score indicates that people miss 13 percent of the weighted sum of items in the dimension.

The introduction of weights decreases the national values of the aggregated index for the most deprived countries. This is due to the fact that weights give less importance to the most frequently deprived items. The highest difference concerns Estonia, Greece and Portugal, where the importance of the less possessed items (not having a week holiday, not keeping the home adequately warm, the enforced lack of a car) is decreased a lot in the weighted approach, as a majority of people lack these items (see Annex F). The weighted approach can therefore modify the ranking order of the countries.

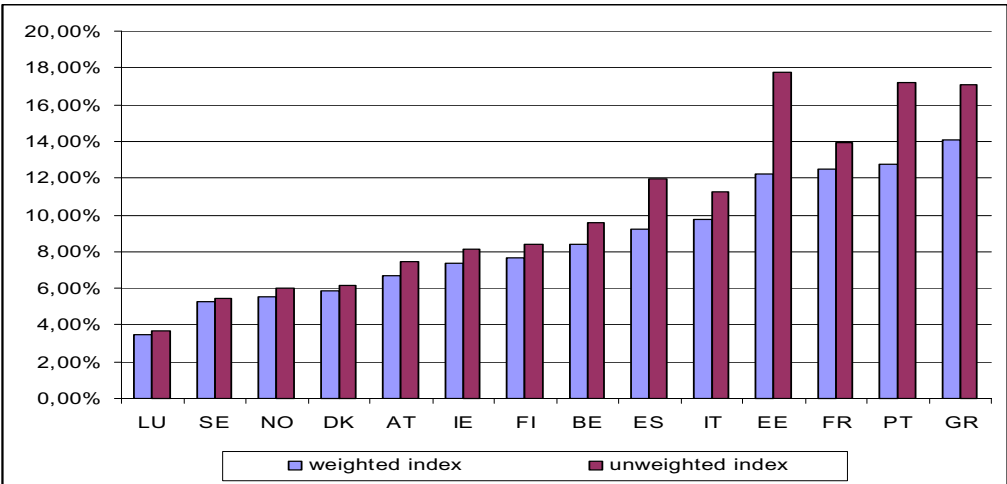


Figure 3: Mean weighted/unweighted composite index of the economic strain + durables dimension

Source: Eurostat, EU-SILC survey year 2004. Reference population: people aged 0+. Indexes were normalised to 1.

¹⁹ For proportion, the coefficient of variation is the square root of the ratio of proportion of “haves” and the proportion of “haves not”. See Eurostat (2003) for a similar proposal

²⁰ Whelan C, Layte R, Maitre B, Nolan B (2001).

²¹ As suggested for instance by Atkinson, Cantillon, Marlier, Nolan (2005).

If we accept the assumption that expectations about how much an item constitutes a (social/national) “necessity” depends on the extent to which the item is possessed in the country, a weighted approach is the right way to take into account national differences in the hierarchy of items in the enlarged union. This attenuates the “absolute” aspect of the measures of deprivation used so far, by taking into account the national differences in the relative importance of items. It is however less transparent, more difficult to interpret than an ‘absolute’ un-weighted measure. Both measures could therefore be used jointly and offer useful information on both aspects (“absolute” and relative) of deprivation.

This interpretation is however not as transparent as the information provided by a headcount and is not easily communicable. This could however be the object of deepened punctual studies.

How can EU-SILC be improved to better measure material deprivation in the EU?

The current list of items in EU-SILC is mainly a (limited) subset of ECHP items²², chosen by national statisticians among items considered as better reflecting living conditions in Europe. This limited number of items available in SILC is the main constraint hampering the further development of indicators of material deprivation to be used at EU level. A too small number of items may lead to selecting which part of the deprived population will be monitored, and this selection might impact differently on results country by country. In addition, in the context of the EU enlargement, questions on the adequacy of the current list of EU-SILC variables to depict correctly material deprivation in the enlarged Europe are regularly put on the table. Therefore we would ideally need a choice of items for each dimension that is large enough and captures all key material deprivation situations that we want to monitor in a comparable way across countries. This selection of items might be partly based on a “reasoned” choice that would clarify the meaning of the dimensions identified through the factor analysis.

Such a reasoned choice, as opposed to a choice of items based on prevalence, could in particular draw on

- the in-depth analysis (of the kind presented in the first part of the document) of the EU-SILC results for all EU Member States (available early 2007),
- a consensus survey run across all EU member States. Such a survey, run through the Eurobarometer tool, will inform us on what items are considered by EU citizens as necessities in their country (a Eurobarometer survey is planned for the beginning of 2007).
- relevant national expertise, since it is necessary to assess the normative value of items in each national context. Such expertise could also usefully bring about the views of those EU citizens that have experienced poverty and/or social exclusion²³.

At its 23 October 2006 meeting, the Indicators Sub-Group of the Social Protection Committee (ISG) has validated such an approach and welcomes the Commission's proposal to set up a task force gathering both members of the Income and Living Conditions Statistics working group and of the ISG.

The Task Force will

- Propose an indicator for the “economic strain + durables” dimension based on the currently available items before the summer 2007 (for possible inclusion in the next OMC reporting exercise)

²² Only two new items were introduced in the list (the affordability to possess a washing machine and the capacity to face unexpected expenses).

²³ The conclusions of the June 2006 Austrian presidency meeting: “Fifth European meeting of people experiencing poverty, Brussels, 12-13 May 2006: ‘How do we cope with everyday life?’” could usefully feed into the reflection.

- Test the possibility to build an indicator using the current housing items available and make concrete proposals to better exploit the existing SILC information on housing (including data on housing costs and from the 2007 SILC module that will be available at the end of 2008).
- Propose a reasoned choice of deprivation items that will be tested in the SILC 2009 module on material deprivation (a draft list of variables should be ready by the end of 2007).
- Propose indicators based on this choice of items, and ways to regroup them by dimension. In that exercise the methodology presented in the first part of the paper could be very useful.
- Finally the Task Force might test the feasibility and impact on comparability of a different selection of items depending on the country. A common indicator could for instance be based on a corpus of common items that would identify situations of deprivation across the whole EU, supplemented by a small number of items specific to each country.

The following issues will be addressed in particular:

1. The need to ensure maximal comparability in survey questions

The first thing that can be done to improve the measurement of material deprivation in SILC is to increase the comparability of the survey questions across countries. Eurostat is currently reviewing the actual phrasing of the questions used in the national questionnaire to collect the data for the target variables and has found divergences that are likely to affect the comparability of the results. Eurostat will work with MS in the coming months in order to clarify the definitions of the target variables and fix the main sources of discrepancies affecting comparability.

2. Are current items considered as social necessities by the overall population?

The current choice of items available in SILC is based on experts' knowledge. This choice might usefully be confronted with information on social perceptions about which items are considered as essential by the majority of the population, i.e. a consensus control. So far, in the absence of such information, frequency controls on existing data that inform us about the degree of penetration of the items in a country were taken as an indication of social values. In order to assess the current list and test other items to eventually complement it with items better fit to reflect living patterns which are customary or at least widely encouraged in EU Member States, additional information is needed.

One way of collecting this additional information is to run consensus surveys in order to identify which deprivation items are actually directly associated with poverty and social exclusion in the perception of people in their country. This approach is in line with the EU definition of social exclusion that defines the poor and socially excluded as "those with resources (material, cultural and social) that are so limited as to exclude them from the minimum acceptable way of life in the Member States in which people live". In this definition, the standard is set in relation to the perception of the members of a given society. The reference to a "minimum acceptable way of life" can therefore in practice be translated into a list of items that are viewed as "necessities" by the society.

To do so, an EU wide Eurobarometer survey on the perception of poverty will be run in January or February 2007. The results will be available during the spring 2007 and analysed. The results will be used to select a number of deprivation items that will be tested in the SILC module 2009, on the basis of which a number of items will be proposed as additional variables in SILC. This will also be the occasion to fill important gaps in the background knowledge useful for to implement (or possibly adapt) the methodology presented in previous sections. Indeed, additional questions on whether the same basket of items has to be considered as social necessities in all EU Member States could also be addressed. A common indicator could for instance be based on a corpus of common items that would identify situations of deprivation across the whole EU, supplemented by a small number of items specific to each country.

The following principles have been applied to the design of the draft Eurobarometer questionnaire.

- The target population is the whole population aged 15 years and over.

- The survey should be designed to understand better what people have in mind when they think about what are the "necessities of life" with regards to different aspects of every day life.
- It should refer to situations in the reference country, and not about poverty as it can be experienced in other parts of the world.
- The survey will not cover the most extreme aspects of poverty, such as starvation, homelessness, but rather be restricted to situations that are less obvious.
- The survey should refer to the situation of individuals in the general population, but also cover some child specific items (see point 3 below).
- One of the assets of the material deprivation approach is that it can grasp better the multi-dimensionality of social exclusion. As mentioned above, the definition of poverty adopted by the EU, as long ago as 1984 is the following: "people are said to be living in poverty if their income and resources are so inadequate as to preclude them from having a standard of living considered acceptable in the Society in which they live". Because of their poverty they may experience multiple disadvantages through unemployment, low income, poor housing, inadequate health care and barriers to lifelong learning, culture, sport and recreation. They are often excluded and marginalised from participating in activities (economic, social and cultural) that are the norm for other people and their access to fundamental rights may be restricted. Following this definition, we should aim at covering a broad range of dimensions which can be described as follows: **financial stress, poor housing, enforced lack of durables, poor quality food and clothing, exclusion from essential social and leisure activities.**
- In an international perspective, we believe that we should leave out items relating to access to social services, and in particular access to health services and to education since these are too dependant on the way the welfare system is organised.

A copy of the current draft questionnaire that has been sent for consultation and is presented in annex G of the paper.

3. The need for child specific items

For the specific group of children, the use of deprivation indicators was so far exploratory and permitted to confront monetary results usually used to assess children specific risk with alternative indicators. One more reason can be advanced to use jointly monetary measures and material deprivation indicators for the children group. Indeed, it is well known that the equivalence scale used to compare income of different household types is not neutral in terms of composition of the poor population and of relative risk of families versus other households. This limitation particularly applies to the case of children since the use of a standard equivalence scale unevenly reflects the actual relative "cost" of a child within a household across all EU countries. The use of deprivation measures which are independent on any equivalence scale could give a different view of child poverty.

Finally, studies have highlighted that resources are not necessarily equally shared among members of a given household. In some families with a tight budget, the redistribution of resources could be in favour of the child, since the parents are trying to alleviate the impact of economic strain on the living standard of the child. In other cases, the household income can be unevenly spent on adult consumption (alcohol, gaming, etc). However, both income and material deprivation measures can not tackle the issues associated with the hypothesis of equal intra household sharing of resources. Both income and deprivation items used so far are based on household variables which are assigned to each household member, as specific items for children are not yet included in the EU-SILC variables.

Even if most of the items already available are relevant for the children group, as they can be considered as social necessities, in terms of access to adequate eating, comfortable housing, customary durables etc., it is very important that focused material deprivation measures depicting specific children conditions of life, which can be different from their parents, are included in the EU-SILC instrument. To do so, the Eurobarometer will include children items.

The Eurobarometer survey can only reflect the views of all adults concerning the situation of children, and probably the views of adults, in particular those adults with children, is relevant to determine what the society considers as a necessity for children. However, it cannot take into account of the fact that

children's sense of full participation in society may refer to norms and values that are to a great extent determined by peers, e.g. the children themselves. In the Eurobarometer results, it might therefore be worth looking specifically at the results for the lower age groups e.g. 15-21 as a proxy for what would be important for teen-agers.

Finally it is worth noting that some Member States have experience in including children aged 11 or more in their household survey samples as a way to collect information that are child specific and that would be difficult to collect from the parents. The Task Force might learn from these examples.

4. A detailed focus on poor housing: what could we learn from the SILC module 2007

In the context the monitoring of the fight against poverty and social exclusion at EU level, indicators covering the housing dimension are still missing even though poor housing has been identified as one of the key dimension of social exclusion that most usefully complement the picture given by income poverty. The 2007 SILC module will provide an insight in housing conditions in Europe. Results will be available by the end of 2008 and could be used in the reflection on the choice of items for a possible indicator of housing deprivation. The areas covered by the module are: self-perceived shortage of space, adequacy of main facilities (electricity, water, heating, air conditioning), overall satisfaction with the dwelling, accessibility of basic services in the local area, and reasons for moving.

5. The need for a regular assessment

Even when the reworked list of items will be included in EU-SILC, it is important to keep in mind that this list will need to be assessed regularly in order to ensure that they continue to properly reflect consumption patterns in all Member States.

Preliminary Conclusions

At EU level, the most frequently used commonly agreed indicators in the field of poverty and social exclusion are based on a monetary approach to poverty which is relative. Nonetheless, questions are raised concerning the ability of the existing portfolio of indicators to satisfactorily reflect the situation in New Member States, Acceding and Candidate countries, as well as differences between them and the 'old' Member states. The approach proposed in this paper aims at complementing the information summarised in the current list of indicators, by looking at more "absolute" material deprivation measures, in order to give a more complete picture of the living conditions of people in different national contexts. But this is not the only reason: even at national level, it is now well recognized that different approaches to poverty measurement, including the material deprivation one, are useful to take into account the other aspects of poverty.

The first part of the paper discusses the methodological options for the construction of this type of indicators. Drawing from the existing literature, it illustrates the potential of the new EU-SILC instrument in this field by using the 2004 harmonised micro-data for thirteen Member states (and Norway). Material deprivation is defined as the enforced lack of a combination of items depicting material living conditions in the EU, such as housing conditions, possession of durables, and capacity to afford basic requirements.

The main methodological questions that are raised in the paper relate to the choice of the constitutive items, their eventual regrouping in dimension and the aggregation of the information contained in each item in a composite index (weighted or not).

The second part of the paper proposes a short and mid-term approach to improve the material deprivation data that can be derived from EU-SILC. The main aims are to improve in the short term the comparability of the existing items and, ultimately, to dispose of an adequate and reasoned choice of items on the basis of which comparable indicators of material deprivation could be adopted for policy monitoring at EU level.

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Statistical annex

Annex A: proportion of people deprived, for each item, total population

Percentage of individuals deprived	AT	BE	DK	EE	ES	FI	FR	GR	IE	IT	LU	NO	PT	SE
Economic strain														
<i>HAS THE HOUSEHOLD BEEN UNABLE :</i>														
<i>TO PAY SCHEDULED RENT, UTILITY BILLS OR HIRE PURCHASE INSTALMENTS?</i>	3%	7%	5%	15%	7%	12%	13%	30%	9%	13%	5%	12%	8%	10%
<i>WHO CANNOT THE HOUSEHOLD AFFORD:</i>														
<i>PAYING FOR A WEEK'S ANNUAL HOLIDAY AWAY FROM HOME?</i>	25%	29%	9%	71%	44%	20%	33%	47%	23%	39%	12%	9%	61%	14%
<i>KEEPING ITS HOME ADEQUATELY WARM?</i>	2%	6%	10%	5%	9%	3%	24%	17%	3%	11%	1%	2%	41%	1%
<i>EATING MEAT, CHICKEN OR FISH EVERY SECOND DAY, IF WANTED?</i>	9%	4%	2%	16%	2%	4%	8%	8%	4%	7%	2%	3%	4%	3%
<i>CAPACITY TO FACE UNEXPECTED EXPENSES</i>	20%	28%	18%	8%	38%	25%	34%	35%	21%	27%	13%	21%	20%	13%
Durables														
<i>ENFORCED LACK OF:</i>														
<i>COLOUR TV</i>	0%	1%	1%	2%	0%	1%	0%	1%	0%	0%	0%	1%	1%	0%
<i>A TELEPHONE</i>	1%	1%	0%	4%	1%	0%	1%	1%	1%	2%	0%	0%	4%	0%
<i>A CAR OR VAN (FOR PRIVATE USE)</i>	5%	7%	9%	31%	6%	9%	4%	12%	11%	3%	1%	5%	12%	5%
<i>WASHING MACHINE</i>	1%	2%	2%	7%	0%	2%	8%	2%	1%	1%	0%	0%	4%	2%
Housing conditions														
<i>DOES THE DWELLING HAVE PROBLEMS OF :</i>														
<i>INDOOR FLUSHING TOILET ?</i>	2%	1%	1%	19%	0%	1%	1%	4%	1%	0%	0%	1%	4%	0%
<i>BATH OR SHOWER ?</i>	1%	1%	1%	21%	0%	1%	1%	2%	1%	1%	1%	0%	4%	0%
<i>ACCOMODATION TOO DARK</i>	6%	11%	4%	9%	13%	3%	9%	7%	6%	10%	6%	4%	22%	3%
<i>LEAKY ROOF, ROT IN WINDOW FRAMES, DAMP WALLS, ETC. ?</i>	10%	14%	8%	29%	20%	5%	15%	20%	14%	23%	16%	8%	23%	5%

Source: Eurostat, EU-SILC survey year 2004

Notes: In France, the variable measuring the affordability to keep the home adequately warm is not comparable with the other EU countries as it focus on the capacity to keep the house warm instead on the affordability (this overestimates the deprivation rate in France). In Estonia, the variable about the capacity to face unexpected expenses could not be surveyed in 2004 according to the harmonised definition (defining the amount of the unexpected expense as the monthly poverty threshold). A lower amount (1000 instead of 1600 kroons) was chosen as a reference, this underestimates the proportion of people deprived.

Annex B : Share of people affected by material deprivation in each dimension, by number of deprivations

Number of deprivations	AT	BE	DK	EE	ES	FI	FR	GR	IE	IT	LU	NO	PT	SE
Economic strain														
0	64	59	72	26	46	64	46	39	67	52	80	70	31	75
1	20	19	17	46	22	17	22	21	17	21	12	20	25	13
2	9	14	7	18	21	11	16	17	9	14	6	6	27	7
3	5	7	3	7	9	6	10	11	5	8	2	3	13	3
4	1	2	1	2	2	1	5	5	2	4	0	1	4	1
5	0	0	0	1	0	0	1	5	1	2	0	0	0	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Durables														
0	94	91	90	66	93	90	89	87	89	95	99	94	84	94
1	5	7	9	27	6	9	9	12	11	4	1	6	12	5
2	1	1	1	5	1	1	2	1	1	1	0	0	2	1
3	0	0	0	1	0	0	0	0	0	0	0	0	1	0
4	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Economic strain/ Durables														
0	63	58	69	23	45	62	45	38	64	52	80	68	31	74
1	20	18	18	33	22	17	21	20	17	21	11	20	23	13
2	9	12	7	23	20	10	15	17	8	13	6	6	23	6
3	5	7	3	11	9	7	10	11	6	7	2	3	12	4
4	2	3	2	5	3	3	5	6	3	4	0	2	6	2
5	1	1	1	3	1	1	3	5	1	2	0	1	2	1
6	0	1	0	1	0	0	1	2	1	1	0	0	1	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Housing														
0	86	77	88	54	71	91	78	76	83	73	80	89	61	91
1	11	18	10	24	24	7	18	18	13	21	17	10	28	8
2	3	4	2	14	4	1	4	5	4	6	3	1	8	0
3	0	0	0	6	0	0	0	1	0	0	0	0	2	0
4	0	0	0	2	0	0	0	0	0	0	0	0	1	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: Eurostat, EU-SILC survey year 2004. Reference population: people aged 0+. Figures are rounded.

ANNEX C: Database

During the period 1994-2001 the European Community Household Panel (ECHP) has traditionally been the primary source of data used for the calculation of these indicators in the field of Income, Poverty and Social Exclusion. The ECHP was a panel survey based on a standardised questionnaire that involved annual interviewing of a representative panel of households and individuals, covering a wide range of topics: income (including the various social benefits), health, education, housing, demographics and employment characteristics. It was developed by Eurostat (the statistical office of the European Communities) in association with Member States. For Germany, Luxemburg, Sweden and the United Kingdom, data from the national surveys were transformed into the ECHP format. Some non-monetary items were not surveyed in these national surveys and are therefore missing in the ECHP database. Furthermore, for one item related to the arrears, Finland had a very high proportion of missing values. Further information on the characteristics of the survey and availability of data issued from it can be found at the following address:

<http://forum.europa.eu.int/irc/dsis/echpanel/info/data/information.html>

The ECHP is being replaced by the EU Statistics on Income and living conditions (EU-SILC), which is to become the reference source for statistics on income and living conditions, and common indicators for social inclusion. While the ECHP was launched on the basis of a gentleman's agreement, EU-SILC is organised under a Framework Regulation of the European Parliament and the Council (N°1177/2003). Technical aspects of the instrument are defined by five Commission Implementation Regulations ('Sampling and tracing rules'; 'Definitions'; 'List of primary variables'; 'Fieldwork aspect and imputation procedures'; and 'Intermediate and final quality reports').

The EU-SILC project was launched in 2003 on the basis of a 'gentleman's agreement' in six Member States (Belgium, Denmark, Greece, Ireland, Luxembourg, and Austria) as well as in Norway. The starting date for the EU-SILC instrument under the aforementioned Framework Regulation was 2004 for the EU-15 (with the exception of Germany, Netherlands and the UK who have derogations until 2005) as well as for Estonia, Norway and Iceland. The New Member States with the exception of Estonia have started in 2005. Timetables for implementation in Acceding and Candidate Countries (Bulgaria, Croatia, Romania and Turkey) and in Switzerland are being discussed.

Similar items are not fully identical between the ECHP and EU-SILC. For example, the housing conditions items (Leaking roof or damp walls/floors/foundations or rot in window frames or floor) initially surveyed in three separate questions in the ECHP are now surveyed in a single question. The questions on difficulties of payments are surveyed in 3 questions in EU-SILC instead of 4 in the ECHP. The enforced lack of a telephone takes into account the mobile phone in EU-SILC.

ANNEX D: fit of the confirmatory factor analysis, pooled data²⁴

Goodness of Fit Index (GFI)	0.9787
GFI Adjusted for Degrees of Freedom (AGFI)	0.9688
Root Mean Square Residual (RMRS)	0.0669
Parsimonious GFI (Mulaik, 1989)	0.7780

GFI, goodness of fit index, represents the amount of variances and covariances in the sample covariance matrix that are predicted by the model. Theoretically, its maximal value is 1. However, as GFI is affected by the sample size and the number of indicators, its upper bound can be lower than one, even in the case of perfect fit. One rule of thumb is that the GFI for good fitting model should be greater than 0.9.

AGFI, adjusted goodness of fit index, is the GFI adjusted for degrees of freedom. A value superior of 0.8 is more often used as a cut-off value to consider the model as good fitting.

RMSR, root mean square residual, is the square root of the average of the square of the residuals between the sample and modelised covariance matrix. The less is the fit between the model and the data, the larger the RMSR.

PGFI, Parsimonious goodness of fit index, is a modification of the GFI that takes the parsimony of the model into account.

ANNEX E: Covariance between factors, pooled data

	Economic strain	Durables	Housing
Economic strain	1	0,82	0,51
Durables	0,82	1	0,68
Housing	0,51	0,68	1

ANNEX F: value of the weights, by dimension and by country

	Unweighted	AT	BE	DK	EE	ES	FI	FR	GR	IE	IT	LU	NO	PT	SE
Economic strain															
SCHEDULED RENT, UTILITY BILLS OR HIRE PURCHASE INSTALMENTS	0,200	0,220	0,218	0,208	0,222	0,232	0,201	0,225	0,193	0,206	0,216	0,203	0,194	0,251	0,197
PAYING FOR A WEEK'S ANNUAL HOLIDAY AWAY FROM HOME?	0,200	0,170	0,168	0,200	0,074	0,141	0,184	0,172	0,146	0,176	0,152	0,189	0,200	0,106	0,187
KEEPING ITS HOME ADEQUATELY WARM?	0,200	0,223	0,220	0,197	0,247	0,227	0,222	0,197	0,230	0,220	0,221	0,212	0,217	0,162	0,215
EATING MEAT, CHICKEN OR FISH EVERY SECOND DAY, IF WANTED?	0,200	0,206	0,225	0,215	0,217	0,245	0,221	0,237	0,253	0,219	0,230	0,209	0,214	0,261	0,211
CAPACITY TO FACE UNEXPECTED EXPENSES	0,200	0,181	0,168	0,180	0,240	0,155	0,173	0,169	0,178	0,179	0,182	0,187	0,175	0,219	0,189
Durables															
COLOUR TV	0,250	0,257	0,262	0,271	0,292	0,263	0,258	0,290	0,267	0,261	0,260	0,255	0,257	0,271	0,273
A TELEPHONE	0,250	0,261	0,264	0,278	0,280	0,257	0,265	0,293	0,266	0,262	0,249	0,256	0,262	0,258	0,276
A CAR OR VAN (FOR PRIVATE USE)	0,250	0,226	0,224	0,219	0,166	0,218	0,224	0,261	0,209	0,221	0,230	0,238	0,224	0,212	0,236
WASHING MACHINE	0,250	0,256	0,250	0,233	0,262	0,262	0,254	0,156	0,259	0,256	0,261	0,251	0,256	0,259	0,214
Housing															
INDOOR FLUSHING TOILET ?	0,250	0,257	0,265	0,257	0,252	0,272	0,255	0,265	0,262	0,262	0,272	0,265	0,257	0,277	0,256
BATH OR SHOWER ?	0,250	0,259	0,265	0,256	0,246	0,272	0,253	0,265	0,266	0,261	0,271	0,264	0,258	0,276	0,255
ACCOMODATION TOO DARK	0,250	0,248	0,238	0,250	0,283	0,237	0,248	0,243	0,253	0,248	0,247	0,248	0,248	0,226	0,248
LEAKY ROOF, ROT IN WINDOW FRAMES, DAMP WALLS, ETC. ?	0,250	0,236	0,232	0,237	0,219	0,219	0,245	0,227	0,218	0,228	0,210	0,224	0,238	0,221	0,242

Note: The weights are normalised to 1 over items in each dimension.

²⁴ Following Knol and Berger (1991) quoted by Dekkers (2003), the optimisation process suggested in the case of tetrachoric correlations is the unweighted least square (ULS). The Fit of the confirmatory analysis performed country by country is available on demand.

ANNEX G: Draft Eurobarometer questionnaire on material deprivation

Proposed drafting of the main question:

- A. For each of the following living standards listed below I would like you to indicate whether
 (A) this item is necessary, all adults should be able to afford and which they should not have to do without
 (B) this item may be desirable but is not necessary

List of items

a. Financial stress

		Level of relevance (high/low /NR: not relevant)
A	To be able to pay mortgage or rent payments regularly (SILC)	
B	To be able to pay utility bills (electricity, water, gas) regularly (SILC)	
C	To be able to pay arrears on hire purchase instalments or other loan payments (non housing-related debts) regularly (SILC)	
D	Capacity to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day (SILC)	
E	Capacity to face unexpected financial expenses (SILC)	
F	Capacity to make regular savings, even if small amounts	
G	Capacity to make ends meet (SILC)	
H	Capacity to pay for all mandatory insurance	
I		

b. Poor housing, and environment

		Level of priority (high/low /NR: not relevant)
A	To afford a dwelling that is not too dark, with enough light (SILC)	
B	To afford a dwelling without too much noise from neighbours or noise from the street (traffic, business, factories, etc.) (SILC)	
C	To afford a dwelling without too much pollution, grime or other environmental problems in area caused by traffic or industry (SILC)	
D	To afford a dwelling without crime, violence or vandalism in the area (SILC)	
E	To afford a dwelling without a leaking roof, damp walls/floors/foundation, or rot in window frames or floor (SILC)	
F	Affordability to keep home adequately warm (SILC)	
G	Bath or shower in dwelling (SILC)	
H	Indoor flushing toilet for sole use of household (SILC)	
I	Afford to maintain/repair dwelling when paint goes of the walls and/or there are cracks in the walls	
J	Enough space to have children above 5 sleeping in a separate room from the parents	
K	Enough space and privacy to read or write, or..	
L	Hot water	
M	Public space and equipment (street lights, roads, road signs, bus stops) are not (well) maintained	
N	Enough space to invite friends or family for a drink or a meal at home at least once a month	

O		
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c. Enforced lack of durables,

		Level of priority (high/low /NR: not relevant)
A	A telephone (SILC)	
B	To afford paying for the basic telephone fee	
C	Colour TV (SILC)	
D	To afford paying for the basic fee	
E	A computer (SILC)	
F	To afford paying for the internet connection	
G	Washing machine (SILC)	
H	A car (SILC)	
I	To afford paying for the car insurance	
J	A refrigerator	
K	To repair or replace major electrical goods such as refrigerator, or washing machine, when broken	
L	Furniture in good condition	
M	To replace worn out furniture	
N	A cooker adapted to the size of the family	
O	Bed and bedding for everyone in the family	
P		

d. poor quality food and clothing,

		Level of priority (high/low /NR: not relevant)
A	A warm coat for the winter	
B	2 pairs of all weather shoes (suited to climate)	
C	Some new, not second hand, clothes	
D	Appropriate clothes for job interviews or other special occasions	
E	Some clothes that are fashionable	
F	A meal with meat, chicken, fish (or vegetarian equivalent) at least once every 2 days	
G	Fresh fruits and vegetables once a day	
H	Go to the hair dresser regularly	
I		

e. Exclusion from essential social and leisure activities

		Level of priority (high/low /NR: not relevant)
A	Paying for one week annual holiday away from home (SILC)	
B	Buying presents for family or friends at least once a year	
C	Enough money to keep home decorated	
D	An evening out once a month (restaurant, cinema, disco, concert, etc.)	
E	Capacity to afford own home (owned or rented) past 30 years	
F	Inviting people for diner at home once a month	
G	A hobby or leisure activity	

f. Children specific items

		Level of priority (high/low /NR: not relevant)
A	A <u>family</u> holiday away from home for at least one week a year	
B	Enough space and privacy to study or do homework	
C	Basic leisure equipment (e.g. bicycle)	
D	Educational games and books at home	
E	3 meals a day	
F	Inviting friends at home	
G	Celebrations on special occasions (birthday, Xmas or other religious	
H	Fresh fruits and vegetables once a day	
I	A meal with meat, chicken, fish (or vegetarian equivalent) at least once a day	
J	An outdoor space where they can play safely	
K	New properly fitted shoes	
L	Some new, not second hand clothes	
M	Participating regularly in a leisure activity	
N	Participating in school trips	
O	A bed and bedding for her/himself	
P		

ANNEX H: 2007 EU SILC module on housing

AREAS AND LIST OF TARGET VARIABLES

	Module 2007	Housing Conditions
Variable name	Code	Target variable
<i>Shortage of space in dwelling</i>		
MH010	1	Shortage of space in dwelling Yes
	2	No
MH010_F	1	Variable is filled
	-1	Missing
<i>Dwelling installations and facilities</i>		
MH020	1	Adequate electrical installations Yes
	2	No
MH020_F	1	Variable is filled
	-1	Missing
	-2	na (No electricity/installations)
MH030	1	Adequate plumbing/water installations Yes
	2	No
MH030_F	1	Variable is filled
	-1	Missing
	-2	na (No running water/installations)
MH040	1	Dwelling equipped with heating facilities Yes – Central heating or similar
	2	Yes – Other fixed heating
	3	No – No fixed heating
MH040_F	1	Variable is filled
	-1	Missing
MH050	1	Dwelling comfortably warm during winter time Yes
	2	No
MH050_F	1	Variable is filled
	-1	Missing
MH060	1	Dwelling equipped with air conditioning facilities Yes
	2	No
MH060_F	1	Variable is filled
	-1	Missing
MH070	1	Dwelling comfortably cool during summer time Yes
	2	No
MH070_F	1	Variable is filled
	-1	Missing
<i>Overall satisfaction with dwelling</i>		
MH080	1	Overall satisfaction with dwelling Very dissatisfied
	2	Somewhat dissatisfied
	3	Satisfied
	4	Very satisfied
MH080_F	1	Variable is filled

	-1	Missing
Accessibility of Basic Services		
MH090	1 2 3 4	Accessibility of grocery services With great difficulty With some difficulty Easily Very easily
MH090_F	1 -1 -2	Variable is filled Missing na (Not used by household)
MH100	1 2 3 4	Accessibility of banking services With great difficulty With some difficulty Easily Very easily
MH100_F	1 -1 -2	Variable is filled Missing na (Not used by household)
MH110	1 2 3 4	Accessibility of postal services With great difficulty With some difficulty Easily Very easily
MH110_F	1 -1 -2	Variable is filled Missing na (Not used by household)
MH120	1 2 3 4	Accessibility of public transport With great difficulty With some difficulty Easily Very easily
MH120_F	1 -1 -2	Variable is filled Missing na (Not used by household)

Variable name	Code	Target variable
Accessibility of basic services		
MH130	1 2 3 4	Accessibility of primary health care services With great difficulty With some difficulty Easily Very easily
MH130_F	1 -1 -2	Variable is filled Missing na (Not used by household)
MH140	1 2 3 4	Accessibility of compulsory school With great difficulty With some difficulty Easily Very easily
MH140_F	1 -1	Variable is filled Missing

	-2	na (No child in compulsory school)
Change of dwelling		
MH150	1 2	Change of dwelling Yes No
MH150_F	1 -1	Variable is filled Missing
MH160	1 2 3 4 5 6 7	Main reason for change of dwelling Family related reasons Employment related reasons Housing related reasons Eviction/distrain Landlord did not prolong the contract Financial reasons Other
MH160_F	1 -1 -2	Variable is filled Missing na (MH150 not = 1)